

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus, comprising:
  - a variable speed bus;
  - a first unit coupled to the variable speed bus;
  - a second unit coupled to the variable speed bus; and
  - an arbitration and bus clock control unit to adjust the variable speed bus frequency depending on ~~the~~ bandwidth requirements of the first and second units, the arbitration and bus clock control unit to monitor request rates from the first and second units in order to determine the bandwidth requirements.
2. (Original) The apparatus of claim 1, wherein the first unit is a processor unit.
3. (Original) The apparatus of claim 1, wherein the second unit is a video processor unit.
4. (Original) The apparatus of claim 1, wherein the first unit is a hard disk drive controller unit.
5. (Original) The apparatus of claim 1, wherein the second unit is an isochronous data transfer unit.
6. (Original) The apparatus of claim 5, wherein the arbitration and bus control unit recognizes that a request from the isochronous data transfer unit is for an isochronous

data transfer and provides adequate bus bandwidth to accommodate the isochronous data transfer.

7. (Original) The apparatus of claim 6, wherein the isochronous data transfer unit is a 1394 controller unit.

8. (Original) The apparatus of claim 6, wherein the isochronous data transfer unit is a USB controller unit.

9. (Original) The apparatus of claim 1, wherein the variable speed bus, the first unit, the second unit, and the arbitration and clock control unit are located on a single semiconductor die.

10. (Currently Amended) A system, comprising:

- a variable speed bus;

- a device coupled to the variable speed bus including a bus interface logic unit; and

- an arbitration and bus clock control unit to adjust the frequency of a variable speed bus depending on ~~the~~ bandwidth requirements of the device coupled to the variable speed bus, the arbitration and bus clock control unit to monitor a request rate from the device coupled to the variable speed bus in order to determine the bandwidth requirements.

11. (Original) The system of claim 10, the arbitration and bus control unit to communicate bus frequency information to the bus interface logic unit.

12. (Original) The system of claim 10, wherein the device coupled to the variable speed bus is a processor.

13. (Original) The system of claim 10, wherein the device coupled to the variable speed bus is a video processor.

14. (Original) The system of claim 10, wherein the device coupled to the variable speed bus is a hard disk drive controller.

15. (Original) The system of claim 10, wherein the device coupled to the variable speed bus is an isochronous data transfer controller.

16. (Original) The system of claim 15, wherein the arbitration and bus control unit recognizes that a request from the isochronous data transfer controller unit is for an isochronous data transfer and provides adequate bus bandwidth to accommodate the isochronous data transfer.

17. (Original) The system of claim 16, wherein the isochronous data transfer controller is a 1394 controller.

18. (Original) The system of claim 16, wherein the isochronous data transfer controller is a USB controller.

19. (New) The apparatus of claim 1, further comprising a clock throttling logic coupled to the arbitration and bus clock control unit and the variable speed bus, the clock throttling logic to adjust the variable speed bus frequency of the variable speed bus according to the bandwidth requirements of the first and second units based on the request rates from the first and second units.

20. (New) The system of claim 10, further comprising a clock throttling logic coupled to the arbitration and bus clock control unit and the variable speed bus, the clock throttling logic to adjust the variable speed bus frequency of the variable speed bus according to the bandwidth requirements of the first and second units based on the request rates from the first and second units.